said conditions comprising washing with 2X SSC at 40°C, and wherein said nucleic acid encodes a mammalian inhibitor of apoptosis protein (IAP) polypeptide, said polypeptide comprising a ring zinc finger (RZF) domain and at least one baculovirus inhibitor of apoptosis repeat (BIR) domain.--

REMARKS

In general, Applicants' presently claimed invention features substantially pure nucleic acids encoding mammalian IAP polypeptides and methods of using such nucleic acids to produce such mammalian IAP polypeptides.

Support for the Amendments

The specification and drawings have been amended to comply with the requirements of 37 C.F.R. § 1.821 through 1.825. The specification has also been amended to properly refer to each individual panel of a drawing.

The specification and the claims have been amended to correct regrettable typographical errors.

Applicants have added new claims 48 and 49 to cover substantially pure DNA encoding mammalian inhibitor of apoptosis protein (IAP) polypeptides that hybridize under low stringency conditions to SEQ ID NO: 39 and SEQ ID NO: 41, respectively. Support for these new claims may be found in the specification at page 48, lines 15-20.

Applicants have added new claim 50 to cover a substantially pure DNA encoding a baculovirus inhibitor of apoptosis repeat domain that comprises the sequence of SEQ ID

NO: 45, SEQ ID NO: 46, SEQ ID NO: 47, SEQ ID NO: 49, SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 53, SEQ ID NO: 54, SEQ ID NO: 55, SEQ ID NO: 57, SEQ ID NO: 58, SEQ ID NO: 59, SEQ ID NO: 61, SEQ ID NO: 62, SEQ ID NO: 63, SEQ ID NO: 65, SEQ ID NO: 66, or SEQ ID NO: 67. Support for this new claim can be found in the specification at page 19 in Table I (page 19, lines 12-20). The DNA of this claim finds use as, for example, a hybridization probe for screening libraries.

Applicants have added new claim 51 to cover a substantially pure DNA encoding a ring zinc finger domain that comprises the sequence of SEQ ID NO: 48, SEQ ID NO: 52, SEQ ID NO: 56, SEQ ID NO: 60, SEQ ID NO: 64, or SEQ ID NO: 68. Support for this new claim can be found in the specification at page 19 in Table I (page 19, lines 12-20). The DNA of this claim finds use as, for example, a hybridization probe for screening libraries.

Applicants have added new claim 52 to claim nucleic acid encoding an X-linked inhibitor of apoptosis protein (XIAP). New dependent claims 53 and 54 have been added to specifically claim nucleic acids encoding XIAP from a mouse and from a human, respectively. Support for these new claims may be found in the specification at page 21, lines 2-21, page 22, lines 8-32, and in Figs. 1 and 4.

Applicants have added new claim 55 to claim nucleic acid encoding a human inhibitor of apoptosis protein 1 (HIAP1). New dependent claims 56 and 57 have been added to specifically claim nucleic acids encoding HIAP1 from a mouse and from a human, respectively. Support for these new claims may be found in the specification at

page 21, line 22 through page 22, line 7, and in Figs. 2 and 5.

Applicants have added new claim 58 to claim nucleic acid encoding a human inhibitor of apoptosis protein 2 (HIAP2). New dependent claims 59 and 60 have been added to specifically claim nucleic acids encoding HIAP2 from a mouse and from a human, respectively. Support for these new claims may be found in the specification at page 21, line 22 through page 22, line 7, and in Figs. 3 and 6.

Applicants have added new dependent claims 61 and 62 to specifically claim nucleic acids containing the X-linked inhibitor of apoptosis (xiap) gene, where the (xiap) gene is from a mouse or a human, respectively. Support for these new claims may be found in the specification at page 21, lines 2-21, page 22, lines 8-32, and in Figs. 1 and 4.

Applicants have added new dependent claims 63 and 64 to specifically claim nucleic acids containing the human inhibitor of apoptosis 2 (hiap2) gene, where the (hiap2) gene is from a mouse or a human, respectively. Support for these new claims may be found in the specification at page 21, line 22 through page 22, line 7, and in Figs. 3 and 6.

Applicants have added new dependent claims 65 and 66 to specifically claim nucleic acids containing the human inhibitor of apoptosis 1 (hiap1) gene, where the (hiap1) gene is from a mouse or a human, respectively. Support for these new claims may be found in the specification at page 21, line 22 through page 22, line 7, and in Figs. 2 and 5.

Applicants have added new claims 67, 68, 69, and 70 to specifically claim substantially pure nucleic acids having the sequence of and encoding the amino acid sequence of Figs. 1, 2, 3, and 4, respectively. Support for these new claims may be found in the specification, for example, at page 21, line 2 through page 22, line 32, and in Figs. 1-4.

Applicants have added new dependent claims 71, 72, 73, and 74 to specifically claim methods for producing human inhibitor of apoptosis protein 1, human inhibitor of apoptosis protein 2, murine X-linked inhibitor of apoptosis protein, and human X-linked inhibitor of apoptosis protein, respectively. Support for these new claims may be found in the specification, for example, at page 5, lines 7-12; at page 21, line 2 through page 22, line 32; and in Figs. 1-4.

Applicants have added new claims 75-78 to specifically claim substantially pure nucleic acids encoding mammalian inhibitor of apoptosis protein (IAP) polypeptides that hybridize under low stringency conditions to probes derived from the DNA sequences of SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, and SEQ ID NO: 9, respectively. Support for these new claims may be found in the specification at page 48, lines 15-20, and in Figs. 1-4. No new matter is added by any of these amendments.

Sequence Listing

As required by 37 CFR 1.825(a), enclosed is an amended sequence listing consisting of 42 sheets to be inserted at the end of the application. The amendments to

the sequence listing provide each sequence in the specification with a unique SEQ ID NO, and contain no new matter. In particular, SEQ ID NOS: 69-92 have been added to include the sequences described in Table 2, found at page 20 of the specification.

As required by 37 CFR 1.825(b), also enclosed is a diskette containing a copy of the sequence listing in computer readable form including all previously submitted data with the amendments incorporated therein. The contents of the computer readable form are the same as the contents of the paper sheets.

If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

Date: 9/1/00

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